

VAA-Weekly-Progress

01/14-01/21

Context

- Reviewed Final Report from last semester
- Brainstormed new research questions

Goals

- Develop potential research questions
- Transfer Final Report from word doc to latex and follow proper formatting
- Revise Final Report from last semester using comments given by Prof.

Reibman

Research Questions

- How does the distribution of a species-specific training set affect model performance for pose-estimation on antelopes?
 - Does having a higher concentration of extremely similar species to antelopes help?
- When conducting species-specific training, which is more effective: taxonomical or morphological similarity measures?
- In terms of antelope keypoint estimation, what makes a good keypoint set?
 - Is it better to directly define points such as the knee or does using auxiliary points (like the hip) improve localization?
- Does evaluating keypoint labeling schemes based on model accuracy seem like a viable strategy?
- Is it possible to use the keypoint estimations to determine if the camera-trapped animal is an antelope (or a similar species) or not?

Research Questions - Continued

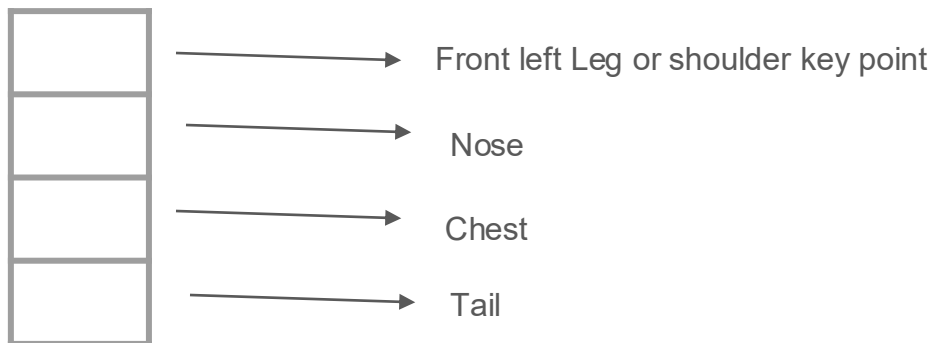
Does Key Point Location Increase Model Performance?

- Are “good” key points just good because they allow for more applications or do they also increase model performance(10 points at different body parts vs 10 on the chest)

Can We Use Unsupervised Learning Architectures and Techniques to Learn “better” Key Points?

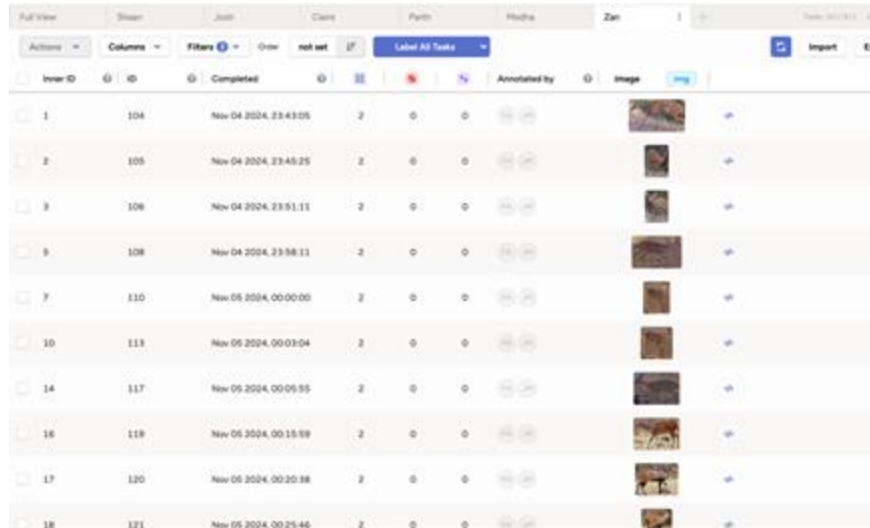
- If we pre-train a generative model to generate images from our camera trap antelope dataset(effectively learning the distribution of the dataset), and try to disentangle it's latent space:
 - Can we use it to learn more representative key points
 - Can we make better use of our smaller dataset by training another discriminator on our labeled key point “skeletons” and then using that to train a generator make key point “skeletons” in the same distribution

Disentangled
Latent Space:



Label Studio

- Reorganized the annotation order since not all assigned annotations were completed(from the last week)
- Everyone has 10 new images to work on in their own personal tab



The screenshot shows the Label Studio interface with a table of tasks. The table has columns for Inner ID, ID, Completed, Progress, Annotated By, and Image. There are 18 rows of tasks, each with a checkbox, an inner ID, an ID, a completion timestamp, a progress bar, an annotated by field, and a thumbnail image.

Inner ID	ID	Completed	Progress	Annotated By	Image
<input type="checkbox"/>	1	104	Nov 04 2024, 23:43:05	2	
<input type="checkbox"/>	2	105	Nov 04 2024, 23:45:25	2	
<input type="checkbox"/>	3	106	Nov 04 2024, 23:51:11	2	
<input type="checkbox"/>	5	108	Nov 04 2024, 23:58:11	2	
<input type="checkbox"/>	7	110	Nov 05 2024, 00:00:00	2	
<input type="checkbox"/>	10	111	Nov 05 2024, 00:03:04	2	
<input type="checkbox"/>	14	117	Nov 05 2024, 00:05:55	2	
<input type="checkbox"/>	16	119	Nov 05 2024, 00:15:59	2	
<input type="checkbox"/>	17	120	Nov 05 2024, 00:20:38	2	
<input type="checkbox"/>	18	121	Nov 05 2024, 00:25:46	2	

Personal Progress

Medha

- Worked on adding in changes from feedback_final_report.txt to the Final Report
- Added in research questions
- Submitted PD Plan
- Watched Welcome Lecture

Josh

- Helped Transfer Final Report to Latex and incorporate feedback
- Added Research Questions and Potential New Directions
- Set up Label Studio So That We can Continue to Annotate Antelope Images

Parth Thakre

- Worked on incorporating the final report feedback into the report
- Worked on transitioning the report to overleaf
- Watched welcome lecture
- Submit PD Plan
- Added a some research questions

Zian

- Joined Github, Joined Slack, Joined Box
- Read Papers that about the Animal Pose, Cross-Domain Adaptation for Animal Pose Estimation and AP-10K
- Read the last semester final report
- Watched Welcome Lecture